DN 30/30

OPERATORS

MANUAL

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CONTENTS

INTRODUCTION

The DN30/30 Stereo Graphic Equaliser represents a breakthrough in equaliser design, giving two channels of full 1/3rd octave equalisation in one compact unit.

All-new circuitry developed specifically for the DN30/30 uses ultra-stable N.I.C. minimum phase, combining filter networks to give unequalled performance. Distortion is below 0.01% from 20Hz-20KHz. Noise better than -90dBm. Scale switching allows the compact slide potentiometers to have a fine resolution for small adjustments and yet retain a full 12dB boost and cut when required. Other features include: subsonic filters, system bypass on power down and delayed turn-on. The comprehensive standard specification also includes balanced inputs and outputs.

As with all Klark-Teknik equipment, this product has undergone a rigorous alignment and "burn-in" schedule before despatch. To ensure continued trouble-free service it is recommended that this manual is read carefully before switch-on.

NOTE This manual does not include servicing information. Any maintenance or repairs should be carried out by a qualified engineer.

FIG. 1

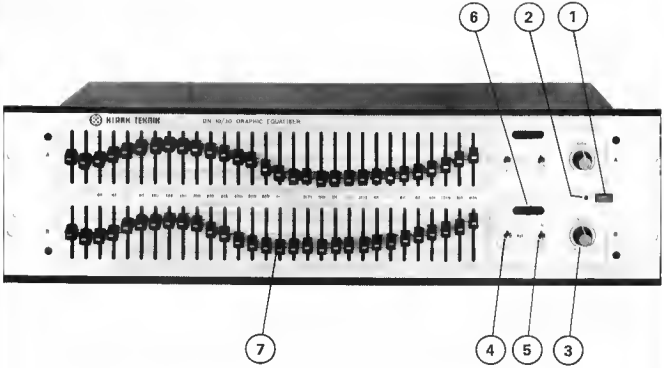
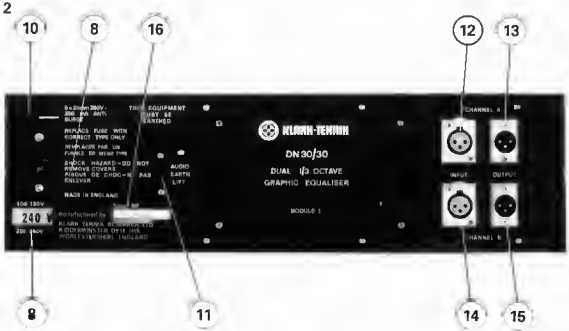

6
2
1
KLARK TEKNIK
DN 30/30 GRAPHIC EQUALISER
7
4
5
3

FIG. 2


10
8
16
12
13
KLARK-TEKNIK
DN30/30
DUAL 1/3 OCTAVE
GRAPHIC EQUALISER
CHANNEL A
INPUT
OUTPUT
CHANNEL B
240 V
9
11
14
15

CONTROL CONNECTOR & INDICATOR FUNCTIONS

(1) Power on/off is by a two-pole push button switch.

(2) Power status is indicated by a red led.

(3) The input level control facilitates input-output system gain of up to 6dB when fully clockwise, and infinite attenuation of input signal when anti-clockwise.

(4) The "scale" switch selects maximum boost and cut for the equaliser of either 6dB or 12 dB. The centre position of this switch performs the "bypass" function enabling A-B comparison between dry and equalised signals.

(5) A filter switch enables the 30Hz subsonic filter to be connected in or out of circuit.

(6) The overload led indicates the presence of excessively high level signals at any point within the equaliser.

(7) Each oil-damped fader has a centre detent allowing accurate "flat" setting.

(8) Mains inlet is via an IEC standard 3-pin socket. (See page 7).

(9) Supply voltage changeover is by means of a two position slide switch accessible from the rear panel.

CAUTION Disconnect supply before changing switch position

(10) Mains fuse is also accessible from the rear panel.

(11) An earth-lift switch is provided. (See Page 6).

(12), (13), (14) & (15) Input and output connections are made via complementary 3-pin XLR style sockets.

(16) The serial number on this label should be quoted in any correspondence concerning the unit

OTHER FEATURES

In addition to the functions previously mentioned, the DN30/30 has several note-worthy features.

The rear p.c.b. houses two relays and associated drive network which perform two important functions:

(1) The output sockets are isolated from the equaliser until power is switched on and all internal power rails are stable. This "delayed turn-on" prevents D.C. or transients caused by powering-up from being transmitted to successive pieces of equipment.

(2) If, during operation, a loss of power to or power related failure in the DN30/30 should occur, the inputs are connected directly to the outputs, providing "total system bypass". Subsequently, loss of power does not cause complete loss of signal; this may save considerable problems in a "live" situation.

OVERLOAD INDICATOR

Audio levels are monitored simultaneously at four points in the DN30/30 circuitry, so giving warning of excessively high level signals present anywhere within the equaliser. The indicators' threshold is +19dBm giving 3dB of headroom before the on-set of clipping.

Generally, if the overload indicator lights the level may be reduced on the input level control. However, if the input stage is being over-driven, i.e. levels greater than +19dBm, then the level must be reduced at the preceding equipment.

As mentioned earlier, an earth-lift switch is situated on the rear panel. Activating this switch connects/ disconnects signal ground to/from the mains and chassis earth. Use of this feature may prove invaluable if earth-loop problems are encountered and may provide a quick, certainly safe, solution.

CONNECTIONS

MAINS

Connection is by an IEC standard power socket, the nominal mains voltage required by the unit is indicated by a label underneath the inlet socket.

If the unit is to be used with any other mains voltage, selection is externally switchable by removing selector switch cover or plate from rear panel. NOTE: Disconnect power cord before attempting this adjustment.

CAUTION Before connecting the DN30/30 to mains power ensure that the correct mains fuse is fitted. Under no circumstances should any fuse other than the specified type be used.

WARNING The DN30/30 is fitted with a 3-pin socket. For safety reasons the earth connection should not be removed.

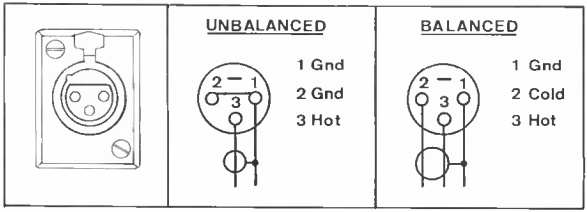
DN 30/30 AUDIO CONNECTIONS

The DN30/30 features full electronic balancing on inputs and outputs as standard. The input stage is a standard differential amplifier arrangement with additional R.F. filtering. The output drive circuitry however is "self-compensating", that is it can be used with either balanced or unbalanced loads, wired in any pin configuration, without causing instability or damage to the output amplifiers. As with transformer-balanced outputs, output level remains constant for balanced and unbalanced operation.

* IMPORTANT

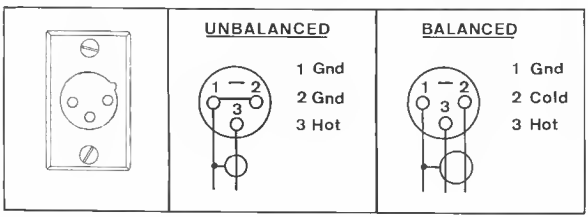
For unbalanced operation Pin (1) and Pin (2) must be connected together on both input and output connectors. This connection must be made at the DN30/30 and not at the following equipment.

INPUT



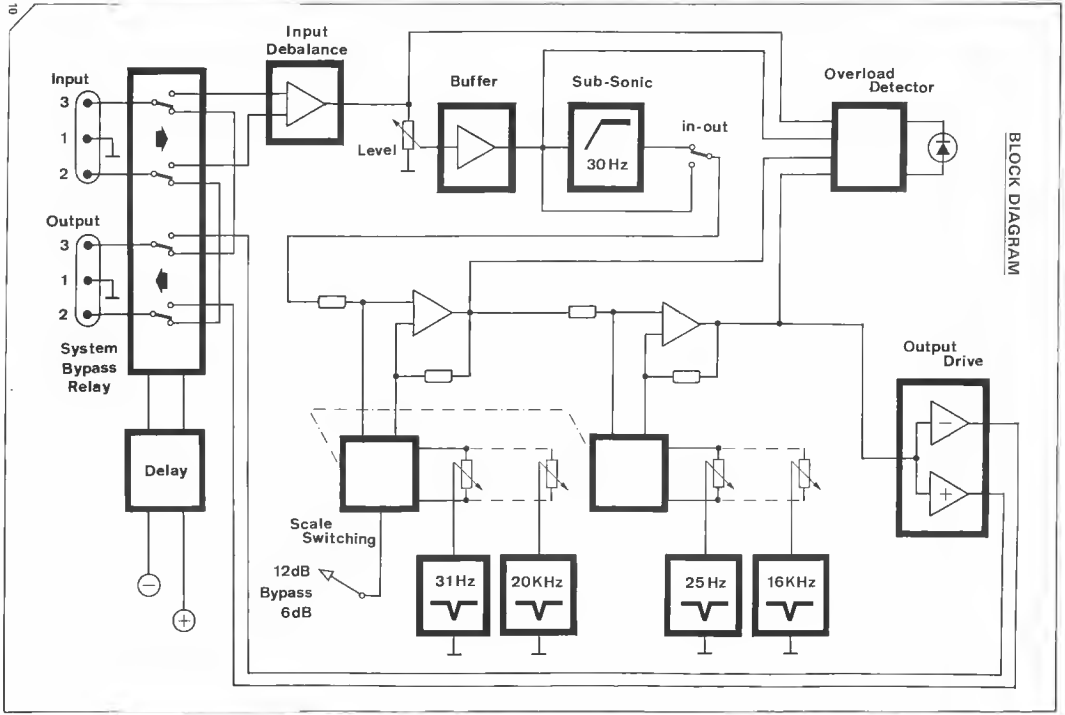
OUTPUT

Output drive capability is +21dBm into a 600 ohms load.



SPECIFICATIONS

Filters	: 30 filters per channel with centres at the following 1/3rd octave ISO standard frequencies: 25,31,40,50,63,80,100,125,160, 200,250,315,400,500,630,800, 1K,1.25K,1.6K,2K,2.5K,3.15K, 4K,5K,6.3K,8K,10K,12.5K,16K,20KHz.
Filter Type	: Optimally combining, minimum phase N.I.C. (negative impedance convertors).
Centre Frequency Accuracy	: Better than ±5% of nominal.
Maximum Boost/Cut	: ±12dB or ±6dB switchable.
Frequency Response	: ±0.5dB 20Hz-20KHz with controls flat.
Subsonic Filter Type:	: 18dB/octave Butterworth -3dB at 30Hz.
Maximum Output Level	: +21dBm into 600 ohm load.
Distortion	: Less than 0.01% at 1KHz at +4dBm into 600 ohm load. Less than 0.05% 20Hz-20KHz at +18dBm into 600 ohm load.
Equivalent Input Noise	: less than -90dBm 20Hz-20KHz unweighted.
Crosstalk	: Less than -80dB at 1KHz.
Input Impedance	: 47K ohms nominal, electronically balanced.
Output Impedance	: Less than 60 ohms source to drive 600 ohm load, electronically balanced.
Power Requirements	: 110/120/220/240v (specify when ordering) 50-60Hz at 15vA.
Terminations:	: Inputs - XLR 03F style. Outputs - XLR 03M style. Power - 3-pin C.E.E.
Dimensions	: Width - 482mm (19 in). Height - 133mm (5¼ in). Depth - 205mm (8 in).
Weight	: Shipping 8kg. Nett 5kg.
Optional Accessories	: Perspex Security Cover.


Input
3
1
2
Output
3
1
2
System
Bypass
Relay
Input
Debalance
Level
Buffer
Sub-Sonic
30Hz
in-out
Overload
Detector
BLOCK DIAGRAM
Output
Drive
Delay
Scale
Switching
12dB
Bypass
6dB
31Hz
20KHz
25Hz
16KHz